

Work Order ID 77768

77768

Page 1

Item ID: D350-748-101

Accept

N900040100

Setup Start *NS1*

Revision ID: U/R

Item Name: Crosstube Installation, High Fwd

Stop *NS2*

Start Date: 21/12/2011 Start Qty: 1.00 *1*

Cust Item ID:

Required Date: 13/01/2012 Req'd Qty: 1.00 *1*

Customer:

Reference:

Approvals: Process Plan: M.L.S

Date: 11/12/21 Tooling:

Date:

Run Start *NR1*

QC:

Date: SPC (Y/N):

Date:

Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

Draw Nbr

Revision Nbr

D350-748-141

F U/R

100

1.00

DC

Document Control

DOCUMENT CONTROL

Memo

Photocopy bluefile & type labels per PPPD350-748-101 CHG002

110

1.10

CNC Bend I

CNC Delta 100 Bender

BENDING MACHINE - CROSSTUBES

Memo

Bend tube as per Dwg D350-748-141 using CNC bender program D350F and Folio FT

120

1.20

QC

Quality Control

QC15- Crosstube Dimensional Check

Memo

0.00

0.00

SCRAP

DP

12-1-18

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			
12.01.19	100	Height / width / twist out of tolerance after bending	GP 12.01.19 QS1042	Acceptable			GP 12.01.19 QS1042	

NOTE: Date & initial all entries

Work Order ID 77768

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December-21-11 9:29:10 AM

Item ID: D350-748-101 Accept ***N900040100*** Setup Start ***NS1***
 Revision ID: U/R Stop ***NS2***
 Item Name: Crosstube Installation, High Fwd
 Start Date: 21/12/2011 Start Qty: 1.00 ***1*** Cust Item ID:
 Required Date: 13/01/2012 Req'd Qty: 1.00 ***1*** Customer:
 Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
125		0.00							
125									
HandFXtube	Memo	0.00							
Hand Finishing Crosstubes	***Stress relief*** Heat treat crosstube as per QSI010 4.3 Temp: <u>375</u> Start time: <u>4h30</u> Finish time: <u>8h30</u>								
127	QC6- Inspect dimensions to drawing	0.00							
127									
QC	Memo	0.00							
Quality Control									

1 SAD 12-01-18

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
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Item Name: Crosstube Installation, High Fwd

Stop ***NS2***

Start Date: 21/12/2011 Start Qty: 1.00

1

Cust Item ID:

Required Date: 13/01/2012 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start ***NR1***

QC:

Date:

SPC (Y/N):

Date:

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
130	Crosstubes	0.00							
130									
Crosstubes									
Crosstubes									
	Memo	0.00							
	1-Drill Tube as per Dwg D350-748-141 Using DT8876 A,B & C Drill Jigs, Set-up drill table as per QSI 010								
	2-Deburr								
	3-Engrave Part # and Batch # as per Dwg D350-748-141								
	4-Remove all marks from tube within limits of D350-748-141								
	5- Apply a light coat of LPS3 on the interior of tube Batch: <u>M 110 779</u>								
140	QC5- Inspect part completeness to step on W/O	0.00							
140									
QC									
Quality Control	Memo	0.00							
	CHECK 10 DEG HOLES WITH DT8876E (EUROCOPTER CLAMP)								

JW
MO

MO 12/1/25

W 12 01 25 ①

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

W/O:		72268 WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: D382-740-1101 PAR #: _____ Fault Category: Landing Gear/Cross tube NCR: (Yes) No DQA: 12/3/16 Date: 12/03/16
+ Design
 Resolution: SCRAP Disposition: SCRAP QA: N/C Closed: 12/3/16 Date: 12/3/16

NCR:		2545.00 WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			
12/13/12	100	tube cracked/Broke while at CAD Parting R.C. Process	12/03/12 JF1042	SCRAP + Destroy No Repair	MO 12/3/13	12-3-13	12/6/12 JF1042	12/3/12

NOTE: Date & initial all entries

Work Order ID 77768***77768***

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Item ID: D350-748-101

Accept

N900040100Setup Start ***NS1***

Revision ID: U/R

Item Name: Crosstube Installation, High Fwd

Stop ***NS2***

Start Date: 21/12/2011 Start Qty: 1.00

1

Cust Item ID:

Required Date: 13/01/2012 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Run Start ***NR1***Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
180		0.00							
180	SprayPaint								
SprayPaint	Memo	0.00							
Spray Painting	1-Prime inside crosstube as per QSI 005 4.2 2-Prime Outside of Tube as per Dart QSI 005 4.2								
190	QC14- Inspect Spray Paint	0.00							
190									
QC	Memo	0.00							
Quality Control	Then, Wrap in plastic bag to protect from scratches								
200		0.00							
200	Crosstubes								
Crosstubes	Memo	0.00							
Crosstubes	1-Install Ground wire Insert, then insert screw and washer 2-Install Abrasion strips as per Dwg D350-748-141 & QSI 035. 3-Install supports Using Dt8876 as per Dwg D350-748-141, Torque to 60-80 IN-LBS								

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

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N900040100

Setup Start *NS1*

Stop *NS2*

Start Date: 21/12/2011 **Start Qty:** 1.00 ***1***

Cust Item ID:

Required Date: 13/01/2012 **Req'd Qty:** 1.00 *** 1 ***

Customer:

Reference:

Approvals: **Process Plan:** _____ **Date:** _____ **Tooling:** _____ **Date:** _____

Run Start *NR1*

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***

210	QC5- Inspect part completeness to step on W/O	0.00
-----	---	------

210

QC	Memo	0.00
----	------	------

Quality Control

220	Pick Kit	0.00
-----	----------	------

220

Packaging	Memo	0.00
-----------	------	------

Packaging

230	QC4- 100% Inspect kits for completeness	0.00
-----	---	------

230

QC	Memo	0.00
----	-------------	------

Quality Control

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
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N900040100

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Item Name: Crosstube Installation, High Fwd

Stop ***NS2***

Start Date: 21/12/2011 Start Qty: 1.00

1

Cust Item ID:

Required Date: 13/01/2012 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Run Start ***NR1***

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
240	Packaging	0.00							
240									
Packaging	Memo	0.00							
Packaging	Identify and pack for shipping as per PPP D350-748-101 Location: _____ PPP Rev: _____								
250	QC21- Final Inspection - Work Order Release	0.00							
250									
QC	Memo	0.00							
Quality Control									

POSITIVE RECALL

EFFECTIVE 12/06/23 AUTH Lu

RELEASED _____ DATE _____

012-03-13

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
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NOTE: Date & initial all entries

Picklist Print

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Page 1

Work Order ID: 77768

77768

Parent Item: D350-748-101

D350-748-101

Parent Item Name: Crosstube Installation, High Fwd

Start Date: 21/12/2011

Required Date: 13/01/2012

Start Qty: 1.00

Required Qty: 1.00

Comments: IPP Rev:A New Issue 06-07-05 JLM
 IPP Rev:B Update qty of MS21042L5 06-09-12 KJ
 IPP Rev:C Rev B 07-11-15 DD
 IPP Rev D Combined manufacturing 08.04.02 EC verified by: DD
 IPP Rev:E 08-06-24 revD as per dwg DD verified by:EC IPP Rev:F
 10.08.04 added QSI010 4.3 DD verf:EC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D350-748-141TRN		Manufactured	No			110	Each	0.0000	1	1			
D350-748-141TRN									**				
Crosstube Turning Detail													
ALS4-1032-225		Purchased	No			200	Each	1,348.000	1	1			
ALS4-1032-225									**				
Insert													

Location	Loc Qty	Loc Code
ST281	1348	
108696	199	
110768	62	
118386	858	
118966	229	

AN960JD10	NAS1149D0363J	Purchased	No			200	Each	0.0000	1	1			
AN960JD10									**				
Washer													
D2856-400		Manufactured	No			200	f	200.2721	1.181	1.243158			
D2856-400									**				
Abraison Strip													

Location	Loc Qty	Loc Code
ST409	200.2721	
63735	0.6696	
68076	0.3149	
71164	21.66	
73491	177.6276	

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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Picklist Print

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Work Order ID: 77768

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Parent Item: D350-748-101

D350-748-101

Parent Item Name: Crosstube Installation, High Fwd

Start Date: 21/12/2011

Required Date: 13/01/2012

Start Qty: 1.00

Required Qty: 1.00

D3502-1 Manufactured No

200

Each

23.0000

2

2

D3502-1

Support

Location

Loc Qty

Loc Code

ST063

23

72129

3

73419

20

MS21920-20 Purchased No

200

Each

60.0000

2

2

MS21920-20

Clamp (per MIL-DTL-8783C)

Location

Loc Qty

Loc Code

LG050

60

116799

10

119386

50

MS27039-1-10 Purchased No

200

Each

41.0000

1

1

MS27039-1-10

Screw

Location

Loc Qty

Loc Code

ST291

41

119307

3

119531

38

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
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Picklist Print

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Work Order ID: 77768

77768

Parent Item: D350-748-101

D350-748-101

Parent Item Name: Crosstube Installation, High Fwd

Start Date: 21/12/2011

Required Date: 13/01/2012

Start Qty: 1.00

Required Qty: 1.00

AN4-41A Purchased No

220

Each

285.0000

8

8

AN4-41A

Bolt

Location

Loc Qty

Loc Code

ST360

285

115108

3

115705

7

117619

50

117795

25

118451

50

118838

50

119328

100

AN4-6A Purchased No

220

Each

4,130.000

16

16

AN4-6A

Bolt

Location

Loc Qty

Loc Code

ST356

4130

119017

4130

AN5-32A Purchased No

220

Each

231.0000

4

4

AN5-32A

Bolt

Location

Loc Qty

Loc Code

ST339

231

118422

6

118628

50

118983

25

119328

100

119862

50

AN960JD416 NAS1149D0463J Purchased No

220

Each

0.0000

32

32

AN960JD416

Washer

December-21-11 9:29:15 AM

Shop Packet Print

Page 3

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

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NOTE: Date & initial all entries

Picklist Print

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Work Order ID: 77768

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Parent Item: D350-748-101

D350-748-101

Parent Item Name: Crosstube Installation, High Fwd

Start Date: 21/12/2011

Required Date: 13/01/2012

Start Qty: 1.00

Required Qty: 1.00

AN960JD516 NAS1149D0563J Purchased No

220 Each 0.0000 8 8

AN960JD516

Washer

D3500-1 Manufactured No

220 Each 4.0000 4 4

D3500-1

Saddle

Location

Loc Qty

Loc Code

ST424

4

70695

4

D3501-1 Manufactured No

220 Each 396.0000 16 16

D3501-1

Bushing

Location

Loc Qty

Loc Code

ST063

396

67757

4

70682

100

73391

85

74866

207

MS21042L4 Purchased No

220 Each 9,077.000 24 24

MS21042L4

Nut

Location

Loc Qty

Loc Code

ST300

9077

117441

51

117601

342

118451

133

119017

3551

119075

5000

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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Work Order ID: 77768

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D350-748-101

Parent Item Name: Crosstube Installation, High Fwd

Start Date: 21/12/2011

Required Date: 13/01/2012

Start Qty: 1.00

Required Qty: 1.00

MS21042L5

Purchased

No

220

Each

2,130.000

4

4

MS21042L5

**

Nut

Location

Loc Qty

Loc Code

ST300

2130

116105

5

116548

43

117611

52

118179

496

118910

34

119109

1500

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

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Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Item	Qty -141	Part Number	Description
1	X	D350-748-141	CROSSTUBE ASSEMBLY (AS 350/355 HI FWD)
2	1	D6015-125	CROSSTUBE (OR D6017-115)
3	2	D3502-1	SUPPORT
4	2	D2856-400-710	ABRASION STRIP
5	1	AELS-1032-225	INSERT
6	1	NAS1149D0363J	WASHER (OR AN960JD10)
7	2	MS21920-20	CLAMP (PER DART SPEC. M-MS21920-20)
8	1	MS27039-1-10	SCREW

GENERAL NOTES:

- 1) MATERIAL: MANUFACTURED FROM D6015-125 OR D6017-115
FINISHED LENGTH = 110.270±0.06
- 2) FINISH: MAGNETIC PARTICLE INSPECT PER DART QSI 038 4.2
CADMIUM PLATE PER AMS-QQ-P-416B, CLASS 1, TYPE II
PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2
PAINT OUTSIDE PER DART QSI 005 4.2
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED.
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX.
- 6) IDENTIFICATION: DART PART NUMBER "D350-748-141" AND BATCH NUMBER ON INSIDE OF CUFF
PER DART QSI 044 6.4 (VIBRATING STYLUS)
- 7) WEIGHT: 30.45 lbs
- 8) PART IS SYMMETRIC ABOUT CENTERLINE, EXCEPT FOR Ø0.297 HOLE.
- 9) BLEND OUT ALL EDGES FROM MACHINING LONGITUDINALLY, TRANSITION SHOULD BE SMOOTH.
NOTE: ALL HOLES ARE DRILLED AFTER BENDING.
- 10) BEND PROGRESSIVELY WITH A MINIMUM OF 7 PASSES. MAXIMUM TUBE FLATTENING DUE TO BENDING IS 6% BASED ON O.D.
- 11) HEAT TREAT TO MIN. 180 KSI PER MIL-T-6736 OR AMS 2759-1C AFTER TURNING. ACCEPTABLE TO VERIFY TENSILE STRENGTH BY HARDNESS TEST PER ASTM E18 TO 40-45 HRC.
- 12) INSTALL D2856-400-710 ABRASION STRIPS WITH A GAP ON BOTTOM SIDE OF CROSSTUBE, CENTERED OPPOSITE D3502-1 SUPPORT, PER QSI 035.
- 13) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE. WHEN DRILLING HOLES EXTREME CARE MUST BE TAKEN AND CAREFUL DEBURRING PERFORMED TO ENSURE A CLEAN HOLE WITH NO CRACKING/CHIPPING/GROOVES.
- 14) TORQUE CLAMPS 60 TO 80 IN-LB. ENSURE AT LEAST 1.5 THREADS SHOWING IN SAFETY AND THAT NUT HAS NOT BOTTOMED-OUT AFTER TORQUING.
- 15) MAX TWIST AFTER BENDING: WITH XTUBE LAYED FLAT ON SURFACE, THE DIFFERENCE BETWEEN CUFF HEIGHTS FROM THE SURFACE MAY BE NO LARGER THAN 0.25 (ZN C1-3).

STOP COPY

INTO

ST

COPY

IT

WORK ORDER

NO 33368 M.L.J

11/12/21

UNDER REVIEW

11.07.12

RELEASED
2011-01-18

F	ADD HRC TEST OPTION (B8-1) PER PAR 09-040, ADD TWIST LIMIT (A8-1, C1-3), ADD D6015-125 OPTION (C8-1), STOCK DIM NOW MACHINED (D1-4)	CP	10.11.23
E	REVISE GENERAL NOTES; UPDATE TO CURRENT ADD STANDARDS; RELOCATED FLAG #6 PER PAR 08-046 (ZN A6-3); TOLERANCES (ZN C6-3, D1-3)	RF	09.09.30
D	MAG. PARTICLE AND CAD PLATE AS MFD.	CP	06.10.31
C	ADD CAD PLATING	CP	06.08.14
B	ADD D6017-115 & PRIME AND PAINT	CP	06.06.30
A	NEW ISSUE	CP	06.03.31
REV.	DESCRIPTION	BY	DATE
DESIGN	92	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	92		
CHECKED	92	DRAWING NO.	REV. F
MFG. APPR.	92	D350-748-141	SHEET 1 OF 4
APPROVED	92	TITLE	SCALE
DE APPR.	92	CROSSTUBE (AS 350/355 HI FWD)	NTS
DATE	10.11.23	COPYRIGHT © 2006 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS COVENANT THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR DISSEMINATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

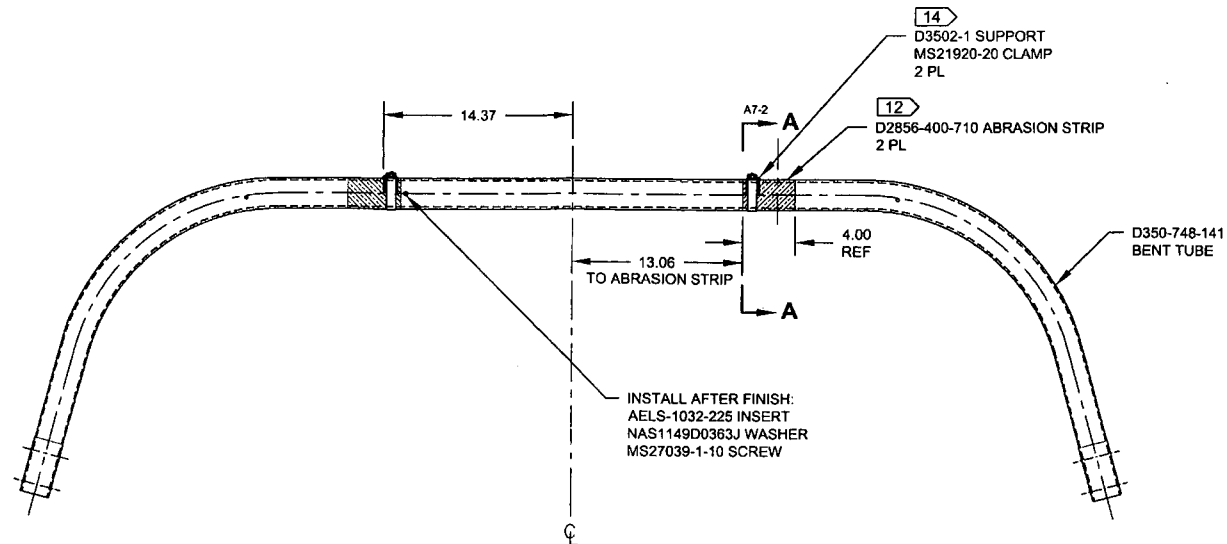
Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

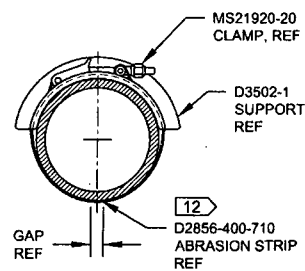
NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

77768



**D350-748-141
ASSEMBLY DETAIL**



SECTION A-A D4-2
SCALE 4X

UNDER REVIEW

11.07.11

RELEASED
2011-01-18

DESIGN		DART AEROSPACE LTD	
DRAWN		HAWKESBURY, ONTARIO, CANADA	
CHECKED		DRAWING NO.	REV. F
MFG. APPR.		D350-748-141	SHEET 2 OF 4
APPROVED		TITLE	SCALE
DE APPR.		CROSSTUBE (AS 350/355 HI FWD)	NTS
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W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

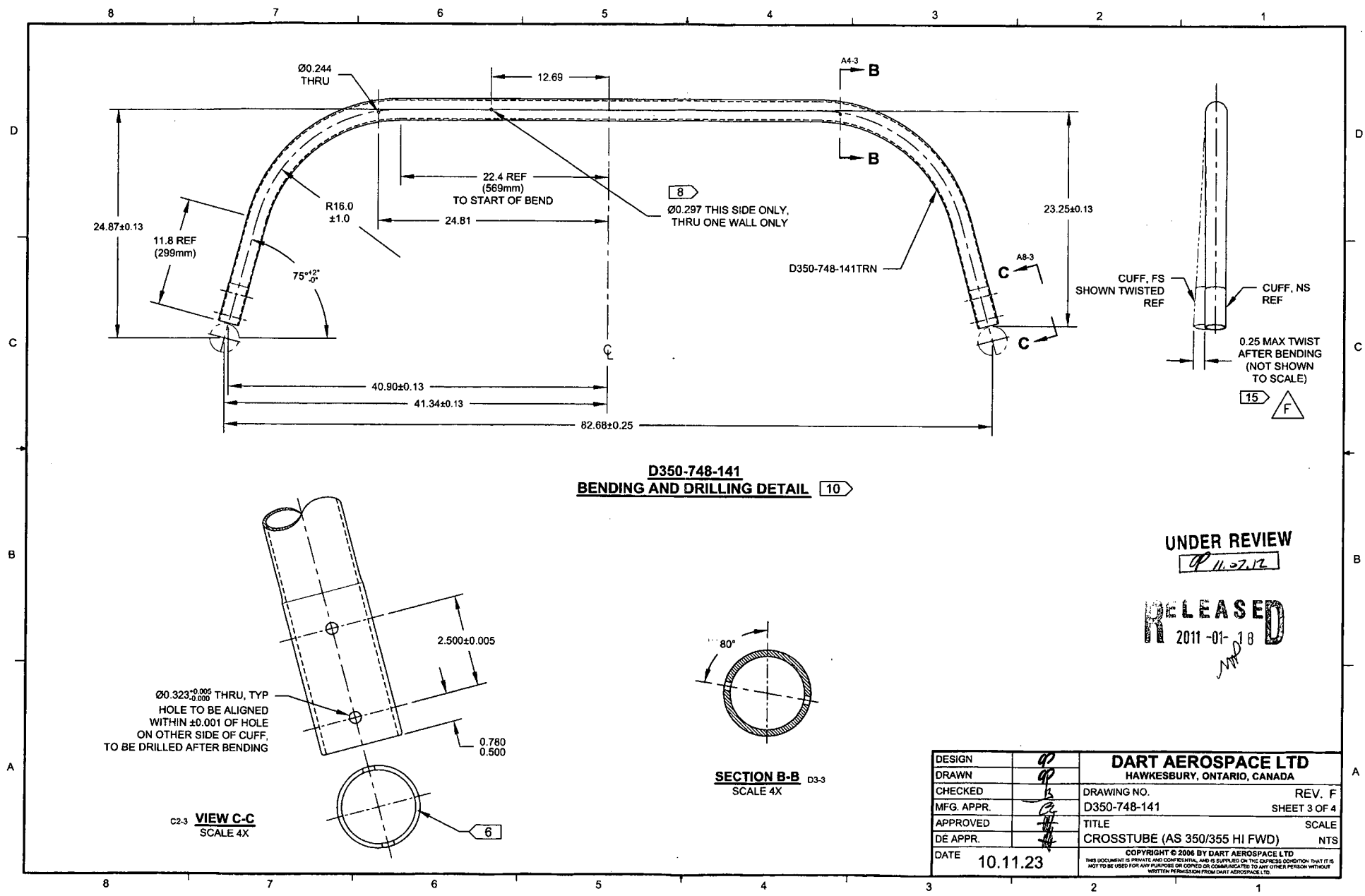
Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

77768



D350-748-141
BENDING AND DRILLING DETAIL 10

UNDER REVIEW
11.07.12

RELEASED
2011-01-18
MJD

DESIGN	DP	DART AEROSPACE LTD	
DRAWN	DP	HAWKESBURY, ONTARIO, CANADA	
CHECKED	h	DRAWING NO. D350-748-141	REV. F
MFG. APPR.	h		SHEET 3 OF 4
APPROVED	h	TITLE	SCALE
DE APPR.	h	CROSSTUBE (AS 350/355 HI FWD)	NTS
DATE	10.11.23	<small>COPYRIGHT © 2006 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL, AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD</small>	

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

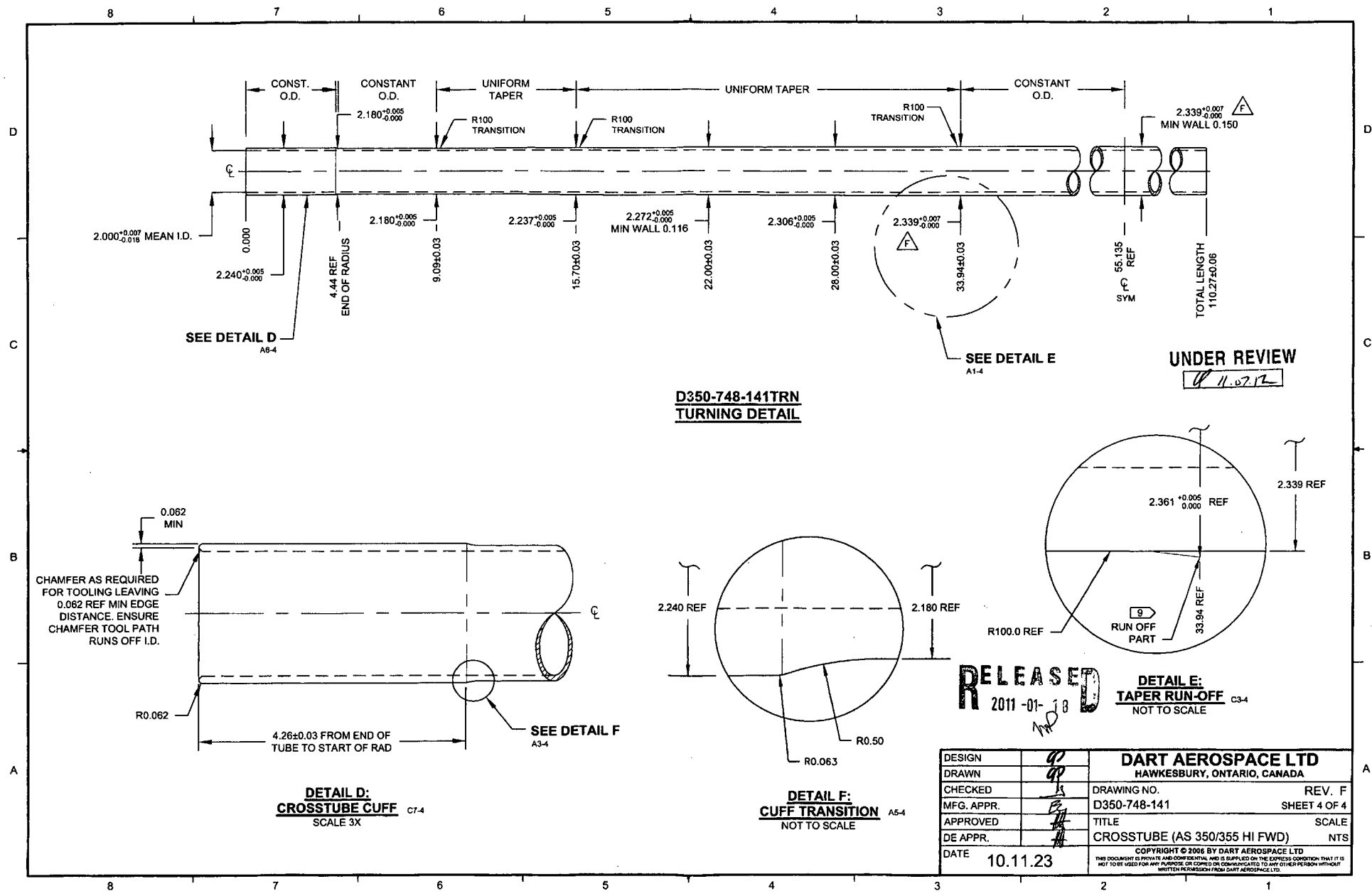
Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

77768



W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

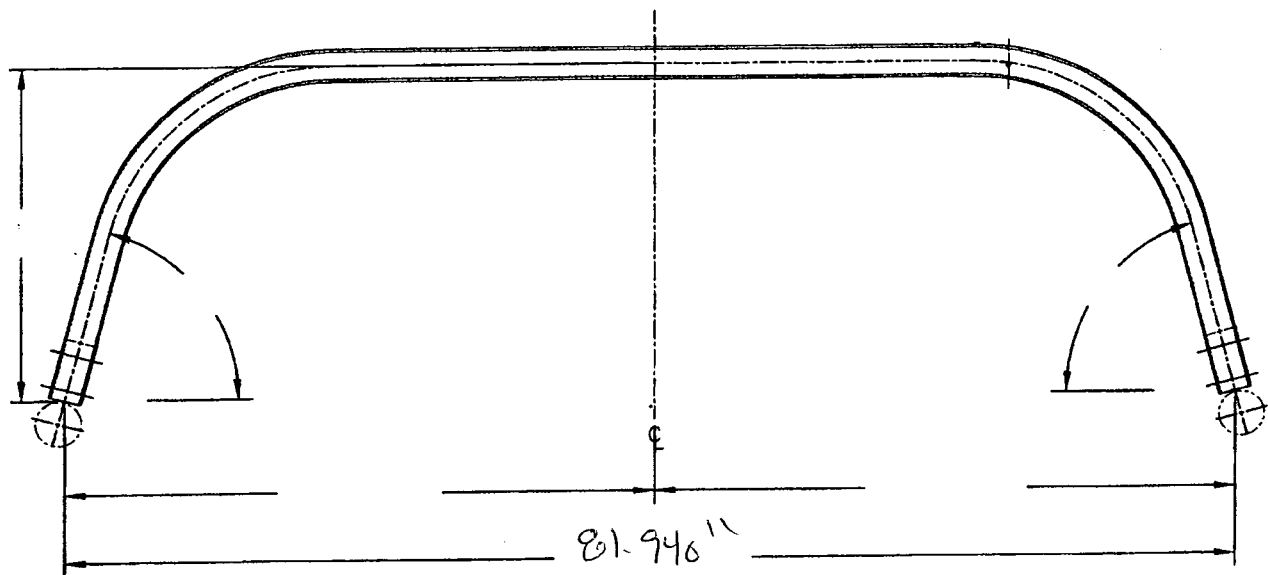
NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

DART AEROSPACE LTD	Work Order: 77768
Description: Crosstube High Fwd (AS350/355)	Part Number: D350-748-101
Inspection Dwg: D350-748-141 Rev: F	Page 1 of 1

For stress relief

Required Dimension	Min	Max
Height	23.13	23.37
1/2 Span	40.78	41.02
Angle	75	77
Total Span	81.56	82.04



Comments
Twist = 0.326"

QC15 Inspection	
Date	

Rev	Date	Change	Revised by	Approved
A	07.02.06	New Issue	KJ/JM	
B	10.08.23	Dwg Rev updated	KJ	
C	11.11.07	Dwg Rev updated	KJ	

10 0913
11 05 09
1800

1800

1800

CADORATH GROUP
NON CONFORMANCE REPORT

CADORATH AEROSPACE ☐

CADORATH DISTRIBUTION ☐

CADORATH COATING ☒

UNIFLYTE ☐

NOTE: THIS FORM MUST BE COMPLETED BY: CUSTOMER ☒ VENDOR ☐ BEFORE PROCESSING OF PART(S)

NCR#: **C1115**

CUSTOMER: ☒ **Dart Aerospace Ltd.**

DATE: **02/24/12**

VENDOR: ☐ **N/A**

CADORATH/UNIFLYTE P/O #:

N/A

PART DESCRIPTION: **Skid (Crosstube)**

CADORATH/UNIFLYTE W/O #:

111679/80/81/82/86

CUSTOMER P/O #: **PO 15990**

PART #: **D350-748-101**

SERIAL #: **77767, 77768, 77769, 77770 and 76254** QUANTITY: **Five (5)**

PURCHASE ORDER INSTRUCTIONS: **MPI and Cad Plate**

DISCREPANCY: **These parts failed our MPI test after plating. They all have cracks. The parts were shipped back to your facility as of February 24, 2012.**

Nick Wasylik (QA Manager)

CADORATH/UNIFLYTE INSPECTION DEPARTMENT

CI
14

02/29/12

CUSTOMER: ☒

VENDOR: ☐

PLEASE COMPLETE THIS PORTION, SIGN AND RETURN TOP COPY OF THIS FORM TO CADORATH/UNIFLYTE

DATE: **02/24/12** P/O: **PO 15990**

CUSTOMER INSTRUCTIONS: ☐

VENDOR CORRECTIVE ACTION: ☐

ATTENTION: Chantal Lavoie

Since the 5 parts were returned, this NCR is the notification that they were sent back for your evaluation.

On your behalf,

AUTHORIZED SIGNATURE

CI
14

02/29/12

Nick Wasylik (QA Manager)

NAME AND TITLE

DATE: 10/13/10

FORM: OPS 097
REVISION: 3